



AFCTN Report 94-113

AFCTB-ID
94-111



Technical Raster Transfer Installation Drawing: Waveguide LPCR-130-2 Radar



Submitted By:
Lockheed Aeronautical Systems

Contract #F33657-90-C-0071-P00013BL2



Supporting:
WR-ALC/TILCA's EDCARS Program



MIL-STD-1840A
MIL-R-28002A (Raster)

Quick Short Test Report

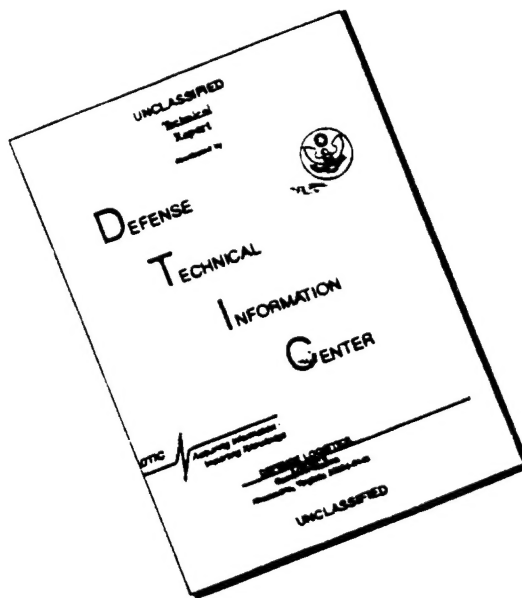
15 August 1994



Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

19960408 028

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST
QUALITY AVAILABLE. THE COPY
FURNISHED TO DTIC CONTAINED
A SIGNIFICANT NUMBER OF
PAGES WHICH DO NOT
REPRODUCE LEGIBLY.

Technical Raster Transfer Installation Drawing:
Waveguide LPCR-130-2 Radar
Lockheed Aeronautical Systems' Data
Supporting:
WR-ALC/TILCA's EDCARS Program
Contract #F33657-90-C-0071-P00013BL2

MIL-STD-1840A
MIL-R-28002A (Raster)

Quick Short Test Report

15 August 1994

Prepared By
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

AFCTB Contact
Gary Lammers
(513) 427-2295

AFCTN Contact
Mel Lammers
(513) 427-2295

DISCLAIMER

This document was prepared as an account of the work sponsored by the Air Force. Neither the United States Government, the Air Force, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, nor represents that its use would not infringe on privately owned rights. Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Air Force. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the Air Force, and shall not be used for advertising or product endorsement purposes.

Available to the public from the
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

This report and those involved in its preparation do not endorse any product, process, or company stated herein. Use of these means by anyone does not imply certification by the Air Force CALS Test Network (AFCTN).

Air Force CALS Test Bed

Notification of Test Results

15 August 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

Lockheed Aeronautical Systems

Identified as follows:

Title:	Installation Drawings: Waveguide, LPCR-130-2-Radar
Program:	EDCARS
Program Office:	WR-ALC/TILCA
Contract No.:	F33657-90-C-0071-P00013BL2
QSTR No.:	AFCTB-ID 94-111

Received on the following media: **9-Track Tapes**

The results of the QSTR evaluation are as follows:

MIL-STD-1840B Standard:	Pass
MIL-STD-1840B Media Format:	Pass
MIL-D-28000A IGES:	N/A
MIL-M-28001B SGML:	N/A
MIL-R-28002A Raster:	Pass
MIL-D-28003 CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed
HQ ESC/AV-2P
4027 Colonel Glenn Highway, Suite 300
Dayton, OH 45431-1672
Phone: 513-257-3085 FAX: 513-257-5881**

Contents

1.	Introduction.....	1
1.1.	Background.....	1
1.2.	Purpose.....	2
2.	Test Parameters.....	3
3.	1840A Analysis.....	5
3.1.	External Packaging.....	5
3.2.	Transmission Envelope.....	5
3.2.1.	Tape Formats.....	5
3.2.2.	Declaration and Header Fields.....	6
4.	Raster Analysis.....	6
5.	IGES Analysis.....	7
6.	SGML Analysis.....	7
7.	CGM Analysis.....	7
8.	Conclusions and Recommendations.....	8
9.	Appendix A - Tapetool Report Logs.....	9
9.1.	Tape Catalog.....	9
9.1.1.	Tape Evaluation Log.....	10
9.1.2.	Tape File Set Validation Log.....	11
9.1.3.	Other Tape Reading Logs.....	14
10.	Appendix B - Detailed Raster Analysis.....	15
10.1.	File D010R001.....	15
10.2.	File D025R002.....	16

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Lockheed Aeronautical Systems' interpretation and use of the CALS standards in transferring technical Raster data. Lockheed used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 94-111

**Date of
Evaluation:** 15 August 1994

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

**Data
Originator:** Darlene Bittaker
Lockheed Aeronautical Systems Company
D/73-34, Zone 0318
86 South Cobb Drive
Marietta GA 30063
(404) 494-4396

**Data
Description:** Technical Raster Test
29 Document Declaration files
80 Raster files

**Data
Source System:**

1840

HARDWARE

SPARC System 630 MP

SOFTWARE

FORMTEK CALS Delivery Proprietary Software

Raster

HARDWARE

SPARC System 630 MP

SOFTWARE

FORMTEK CALS Delivery Proprietary Software

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.10 UNIX
XSoft CAPS/CALS v40.4

MIL-R-28002 (Raster)

HP 735

AFCTN xrastb.hp
Carberry CADLeaf 3.1.2
InterCAP X-Change v7.82

SUN SparcStation 2

AFCTN validg4
AFCTN xrastb.sun4
IGES Data Analysis (IDA) CALSView
IDA IGESView v3.0
IDA IGESView for Windows

Standards

Tested:

MIL-STD-1840A
MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. The tape reel did not contain a label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. A packing list showing all files recorded on the tape was not enclosed.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool* v1.2.10 utility. No errors and one note was reported while evaluating the contents of the tape label. MIL-STD-1840A permits the use of both version three and four. The use of the most current standard should be used and noted.

An attempt was made to read the tape using XSoft's *CAPS read1840A* utility. This utility stopped after reading the first 20 Document Declaration files, because of design limitation in the software. No data files were read.

The media structure of the tape meets the requirements define in MIL-STD-1840A and ANSI 3.27.

3.2.2 Declaration and Header Fields

The tape contained 218 errors and 218 notes in the Document Declaration files and data file headers. All of the errors and notes were reported for the srcdocid and dstdocid records. The AFCTN *Tapetool* will report an error if there is more than one space after the colon for any record, per MIL-STD-1840A, para. 5.1.1.2. The data contained in these records is correct, with the space being a valid character. The reported errors are not valid MIL-STD-1840A errors.

```
srcdocid: 3338432      98897      LG 00020002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.
*** NOTE - Correction made in new Document Declaration Header File.
```

The CALS headers and Document Declaration files from the tape meet the CALS MIL-STD-1840A requirements.

4. Raster Analysis

The tape contained 80 Raster files. Due to the large number of files, only a sample of the files was evaluated. The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were evaluated using the AFCTN *validg4* utility. This program reported that all of the files sampled meet the CALS MIL-R-28002A specification.

The tape was constructed with 29 documents. Each document consisted of one to four Raster files which made up one drawing.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted.

The files were read into Carberry's *CADLeaf* software without a reported error. The images were displayed.

The files were read using IDA's *CALSVIEW* without a reported error.

The files were read into IDA's *IGESVIEW* and *IGESVIEW for Windows* without a reported error and printed.

The files were read using InterCAP's *X-Change* without a reported error.

The Raster files meet the CALS MIL-R-28002A specification.

5. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

6. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included in this evaluation.

7. CGM Analysis

No Computer Graphics Metafiles (CGMs) were included in this evaluation.

8. Conclusions and Recommendations

The physical structure, CALS headers, and Document Declaration files of the tape had no valid errors or warnings. This portion of the tape meets the CALS MIL-STD-1840A requirements.

The Raster files meet the CALS MIL-R-28002A specification.

The tape submitted by Lockheed Aeronautical Systems Company meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sun Aug 14 14:42:20 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set047

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
<<<<< PART OF LOG FILE REMOVED HERE >>>>>				
D029	Document Declaration	D/00260	02048/000001	Extracted
D001R001	Raster	F/00128	02048/000086	Extracted
D001R002	Raster	F/00128	02048/000091	Extracted
<<<<< PART OF LOG FILE REMOVED HERE >>>>>				
D028R001	Raster	F/00128	02048/000101	Extracted
D029R001	Raster	F/00128	02048/000042	Extracted

Catalog Process terminated normally.

9.1.1 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sun Aug 14 14:37:15 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1L00801

3

Label Identifier: VOL1

Volume Identifier: L00801

Volume Accessibility:

Owner Identifier:

Label Standard Version: 3

*** NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version
should be 4 to represent the current level of ANSI X3.27.

HDR1D001

L0080100010001000100 94027 95027 000000EDCARS

Label Identifier: HDR1

File Identifier: D001

File Set Identifier: L00801

File Section Number: 0001

File Sequence Number: 0001

Generation Number: 0001

Generation Version Number: 00

Creation Date: 94027

Expiration Date: 95027

File Accessibility:

Block Count: 000000

Implementation Identifier: EDCARS

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

End of Volume L00801

End Of Tape File Set

Tape Import Process terminated with 0 error(s), 0 warning(s), and 1 note(s).

9.1.2 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Sun Aug 14 14:42:21 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set047

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: LASC

srcdocid: 3338432 98897 LG 00020002LMGEHN

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.

*** NOTE - Correction made in new Document Declaration Header File.

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19921104

dstsys: EDCARS, WR-ALC/TILCA

dstdocid: 3338432 98897 LG 00020002LMGEHN

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.

*** NOTE - Correction made in new Document Declaration Header File.

dstrelid: NONE

dtetrn: 19940127

dlvacc: F33657-90-C-0071-P00013-BL2

filcnt: R2

ttlcls: Unclass

doccls: Unclass

doctyp: INSTL DWG

doctl: WAVEGUIDE INSTLLATION LPCR-130-2 RADAR

2 error(s), 0 warning(s), and 2 note(s) were encountered
in Document Declaration File D001.

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: 3338432 98897 LG 00010002LMGEHN

*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.

*** NOTE - Correction made in new Raster Header File.

dstdocid: 3338432 98897 LG 00010002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new Raster Header File.
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: Unclass
rtype: 1
rorient: 090,270
rpelcnt: 006848,008800
rdensty: 0200
notes: NONE

2 error(s), 0 warning(s), and 2 note(s) were encountered
in Raster File D001R001.

Found file: D001R002
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: 3338432 98897 LG 00020002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new Raster Header File.
dstdocid: 3338432 98897 LG 00020002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new Raster Header File.
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: Unclass
rtype: 1
rorient: 090,270
rpelcnt: 006848,008800
rdensty: 0200
notes: NONE

2 error(s), 0 warning(s), and 2 note(s) were encountered
in Raster File D001R002.

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

A total of 6 error(s), 0 warning(s), and 6 note(s) were encountered in Document D001.

Found file: D002

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: LASC

srcdocid: 3341676 98897 LG 00020002UMGEHN

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.

*** NOTE - Correction made in new Document Declaration Header File.

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19920715

dstsys: EDCARS, WR-ALC/TILCA

dstdocid: 3341676 98897 LG 00020002UMGEHN

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.

*** NOTE - Correction made in new Document Declaration Header File.

dstrelid: NONE

dtetrn: 19940127

dlvacc: F33657-90-C-0071-P00013-BL2

filcnt: R2

ttlcls: Unclass

doccls: Unclass

doctyp: ASSY DWG

docttl: BUS BAR- ESSENTIAL AC BUS, ASSY OF

2 error(s), 0 warning(s), and 2 note(s) were encountered in Document Declaration File D002.

<<<< PART OF LOG FILE REMOVED HERE >>>>

Evaluating numbering scheme...

No errors were encountered during numbering scheme evaluation.

Numbering scheme evaluation complete.

Checking file count...

No errors were encountered during file count verification.

File Count verification complete.

A total of 4 error(s), 0 warning(s), and 4 note(s) were encountered in Document D029.

A grand total of 218 error(s), 0 warning(s), and 218 note(s) were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

9.1.3 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001    ' ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D002    ' ---
```

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D019    ' ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D020    ' ---  
/cals/caps/Bin/read1840A: maximum number of documents (20) exceeded.
```

10.1 File D010R001

